

1/2 024 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--NATURE OF ACTIVE CENTERS DURING BUTADIENE POLYMERIZATION ON COBALT
CATALYSTS -U-
AUTHOR--(04)--BYRIKHIN, V.S., FEDOROV, N.P., ALEKSANDROVSKAYA, D.I.,
MEDVEDEV, S.S.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(30, 589-92
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--BUTADIENE, POLYMERIZATION, COBALT COMPLEX, CATALYST, ALUMINUM
COMPOUND, THIOPHENE, POLYBUTADIENE
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3005/0224 STEP NO--UR/0020/70/191/003/0589/0592
CIRC ACCESSION NO--AT0132496

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AT0132496

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. KINETIC STUDIES REVEALED THAT ONE OF THE LIGANDS FROM THE $\text{Co}(\text{AlCl}_2\text{SUB}_4)\text{SUB}_2$ COMPLEX WERE READILY SUBSTITUTED BY $\text{AlCl}_2\text{SUB}_3$ THIOPHENE (I) TO GIVE A CATALYST CAPABLE OF INITIATING CIS 1,4 POLYMER. OF BUTADIENE. THE MOL. WT. OF POLYBUTADIENE INCREASED WHENEVER THE CONC. OF $\text{CoCl}_2\text{SUB}_2\text{AlCl}_2\text{SUB}_3$ I WAS INCREASED, PRESUMABLY DUE TO HIGHER CONC. OF THE CATALYST AND OF $\text{AlCl}_2\text{SUB}_3$ I, WHICH WAS ALWAYS FORMED ALONG WITH THE CATALYST. FACILITY: MOSK. INST TEKH. KHIM. TEKHNOL. IM. LOMONOSOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 028 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--CHARGE TRANSFER COMPLEXES AND CHEMICAL REACTIONS BETWEEN PRIMARY
AROMATIC AMINES AND AROMATIC CARBOXYLIC ACID DERIVATIVES IN THE SOLID
AUTHOR--(04)--KARDASH, I.E., GLUKHOYEDOV, N.P., PRAVEDNIKOV, A.N., MEDVEDEV,

S.S.
COUNTRY OF INFO--USSR

SOURCE--DOKL. AKAD. NAUK SSSR 1970, 191(2), 391-4 (PHYS CHEM)

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--IR SPECTRUM, UV SPECTRUM, PRIMARY AROMATIC AMINE, AROMATIC
CARBOXYLIC ACID, LOW TEMPERATURE EFFECT, CHLORINATED ORGANIC COMPOUND,
PHTHALIC ANHYDRIDE, MALEIC ANHYDRIDE, COMPLEX COMPOUND

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRA--2000/0699

STEP NO--UR/0020/70/191/002/0391/0394

CIRC ACCESSION NO--AT0124371

UNCLASSIFIED

2/2 028

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AT0124371

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UV AND IR SPECTRA WERE REPORTED FOR COSUBLIMED SYSTEMS OF: CHLORANIL, TEREPHTHALOYL CHLORIDE, ISOPHTHALOYL CHLORIDE, PHTHALIC ANHYDRIDE AND MALEIC ANHYDRIDE WITH PRIMARY AND TERTIARY AMINES: P,C SUB6 H SUB4, (NH SUB2) SUB2, BENZIDINE, P,DIAMINODURENE, M,C SUB6 H SUB4 (NH SUB2) SUB2 AND (P,ME SUB2 NC SUB6 H SUB4) SUB2 TAKEN IN PAIRS. SUCH COSUBLIMATION OF AROMATIC AMINES AND ACID ANHYDRIDES OR CHLORIDES ONTO A SURFACE COOLED WITH LIQ. N RESULTED IN COMPLEX FORMATION AND TRUE CHEM. REACTIONS AT SIMILAR TO 120DEGREESK, I.E. SOMEWHAT ABOVE THAT OF LIQ. N AT WHICH NO TRUE REACTIONS WERE OBSERVED. EVIDENTLY AT THE SLIGHTLY HIGHER TEMP. IT BECOMES POSSIBLE TO HAVE ROTATION OF INDIVIDUAL MOL. GROUPS OR SOME MOBILITY OF MOLECULES PER SE. THE CHARGE TRANSFER COMPLEX FORMATION WAS CHARACTERIZED BY BAND SHIFTS, WHICH WERE TABULATED. THE ELECTRONIC SPECTRA OF THE COSUBLIMATES AT 77DEGREESK REMAINED SUBSTANTIALLY UNCHANGED WITH TIME, BUT SLIGHT WARMING RESULTED IN THE DISAPPEARANCE OF ABSORPTION IN THE VISIBLE SPECTRUM AND DEVELOPMENT OF CHEM. REACTIONS WHICH COULD BE FOLLOWED BY IR SPECTRA, WHICH REVEALED AMIDE GROUP DEVELOPMENT.

FACILITY: FIZ. KHIM. INST. IM. KARPOVA, MOSCOW, USSR.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--EFFECTS OF THE ADDITION OF AN EMULSIFIER AND MONOMER IN THE COURSE
OF THE EMULSION POLYMERIZATION OF STYRENE IN THE PRESENCE OF ANIONIC
AUTHOR--(04)-ZUIKOV, A.V., MEDVEDEV, S.S., DUDUKIN, V.V., OTROSHKO, G.V.

COUNTRY OF INFO--USSR

SOURCE--VYSOKOMOL. SOEDIN., SER. A 1970, 12(2) 376-81

DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, CHEMISTRY

TOPIC TAGS--EMULSION POLYMERIZATION, STYRENE, POLYMERIZATION KINETICS,
BENZOYL PEROXIDE, NITRILE, LATEX

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1992/0423

STEP NO--UR/0459/70/012/002/0376/0381

CIRC ACCESSION NO--AP0111517

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0111517

ABSTRACT/EXTRACT--(U) GP-0-

ABSTRACT. THE KINETICS OF EMULSION POLYMN. OF PHCH:CH SUB2, INITIATED BY BZ SUB2 O SUB2 OR AZOBISISUBJTYRONITRILE, WAS STUDIED AT 60 PLUS OR MINUS 0.1 DEGREES IN THE PRESENCE OF PROKANDL 228 EMULSEFIER, HOICH SUB2 CH SUB2 O) SUBX(CH SUB2 CHMEDISURVICH SUB2 CH SUB2 O)H (1). THE POLYMN. OCCURRED IN LATEX PARTICLES WHICH CONTAINED ALL OF THE MONOMER INTRODUCED INTO THE SYSTEM. FROM THE BEGINNING OF THE POLYMN., THE LATEX PARTICLES WERE COVERED WITH AN ADSORBED LAYER OF I WHICH INCREASED THEIR STABILITY AND DETD. THE POLYMN. KINETICS.

UNCLASSIFIED

1/3 021 UNCLASSIFIED PROCESSING DATE--13SEP70
TITLE--MOLECULAR WEIGHTS OF POLYBUTADIENES PREPARED WITH THE PI
ALLYLNICKEL CHLORIDE DIMER AND TITANIUM TETRACHLORIDE CATALYST SYSTEM
AUTHOR--(04)-PAKURO, N.I., ZABOLOTSKAYA, YE.V., PRAVIKOVA, N.A., MEDVEDEV,
S.S.
COUNTRY OF INFO--USSR
SOURCE--DOKL. AKAD. NAUK SSSR 1970, 190(2), 361-2 (CHEM)
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--MOLECULAR WEIGHT, POLYBUTADIENE, ORGANONICKEL COMPOUND,
CATALYTIC POLYMERIZATION, CHROMATOGRAPHY, SOLUBILITY, INTRINSIC
VISCOSITY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1984/1578 STEP NO--UR/0020/70/190/002/0361/0362
CIPC ACCESSION NO--AT0100196

UNCLASSIFIED

2/2 021

UNCLASSIFIED

PROCESSING DATE--15SEP70

CIRC ACCESSION NO--AT0100196

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE MOL. WTS. OF THE TITLE POLYBUTADIENES (I) WERE STUDIED BY SEDIMENTATION CHROMATOG. AND VISCOMETRY. THE I WERE DISSOLVED IN A MIXT. OF 84PERCENT PHME AND 16PERCENT ETUH AND PPTD. WITH A MIXT. OF 45PERCENT PHME AND 55PERCENT ETOH. THE SOLY. OF I INCREASED WITH BUTADIENE CONCEN. AND DECLINED WITH INCREASING CATALYST CONCEN. THE INTRINSIC VISCOSITY OF THE I WAS PROPORTIONAL TO THE BUTADIENE CONCEN. AND INVERSELY PROPORTIONAL TO THE CATALYST CONCEN., PRESUMABLY DUE TO THE FORMATION OF "LIVING" POLYMERS. MOL. WT. DISTRIBUTION CURVES HAD 2 MAX., WHICH WERE SHIFTED TO THE RIGHT AT HIGH BUTADIENE CONCNS. THE POLYDISPERSITY (WHICH WAS VERY HIGH) DEPENDED ON REACTION CONDITIONS.

UNCLASSIFIED

Acc. Nr.

AT0045338

Abstracting Service:
CHEMICAL ABST.

5-70

Ref. Code

UR0020

90949e Nature of active centers during anionic polymerization. Polyakov, D. K.; Baranova, N. I.; Gantmakher, A. R.; Medvedev, S. S. (Fiz.-Khim. Inst. im. Karpova, Moscow, USSR). *Dokl. Akad. Nauk SSSR* 1970, 190(1), 148-50 [Phys. Chem. (Russ)]. The electronic absorption spectra corresponding to the ion pairs and free carbanions of the 1,1-diphenylbutyllithium (I)-tetrahydrofuran (II), 1,1-diphenylpolyisoprenyllithium (III)-II, and 9,10-dihydroalkylanthracenyllithium (IV)-II systems was studied over a broad range of concns. by a combined spectrophotometric and conductometric method (P., 1963, 1965, 1967). At low I and II concns. ($<10^{-4}$ mole/l.), the dependence of the equiv. elec. cond. on concn. followed Ostwald's law. The dissocn. consts. of the "living" ends of the I and II systems in this region were 3.5×10^{-4} and 13.3×10^{-4} mole/l., resp., and were const. $<10^{-4}$ moles/l. The mobility of the carbanions decreased from 88.5 to 15.9 cm²/ohm equiv. on passing from I to II carbanions. At I and II concns. $>10^{-4}$ mole/l., deviations from Ostwald's law were obsd. The electronic spectra in the region of free ion predominance (I and II concns. $\sim 4 \times 10^{-4}$ mole/l.) and ion pair predominance ($\sim 3 \times 10^{-4}$ mole/l.) were identical, so the position of the max. absorption band did not change on passing

REEL/FRAME

19780265

7

AT0045338

from free carbanions to ion pairs. Similar results were obtained with III. The same max. (445 mμ) was obsd. in the electronic absorption spectra for the free ions and the ion pairs of this system. The identical electronic spectra for the free ions and ion pairs in all the systems studied indicated that changing the energy of electrostatic interaction of the ion pair components has little effect on the absorption spectra. Changing the generation or solvent in anionic systems can have a decisive effect on the kinetics of the process, but has little effect on the structure and compn. of the copolymers.

DBJR

AD

2/2

19780266

USSR

MEDVEDEV, V., Engineer

"Data Transmission at Interplanetary Distances"

Moscow, Radio, No 3, March 1971, pp 17-18

Abstract: This article contains a discussion of problems encountered in transmitting information over planetary distances and possible means of solving them. The discussion centers around more efficient use of the carrying capacity of the radio channels, especially means of lowering the redundancy of messages transmitted from spacecraft. It is proposed that a sorting procedure be superposed on the constant-rate sampling technique used to select values of the measured parameters to be transmitted. Thus, only significant variations of the parameter would be reported. Further sophistication of the on-board equipment might allow for reporting only those measurements needed for final calculations. The special problem of reducing the redundancy of transmitting television pictures is mentioned but no solution is suggested.

1/1

30

USSR

UDC: 681.3.06:51

MEDVEDEV, V. D.

"An Algorithm for Automatic Construction of a Syntactical Discriminator"

Tr. Mosk. ekon. stat. in-ta (Transactions of the Moscow Economics Statistics Institute) Part 1, 1973, pp 69-82 (from RZh--Avtomatika, telemekhanika i vychislitel'naya tekhnika, No 12, 1973, Abstract No 12B160)

Translation: An important problem in the design of translators for program languages is the construction of a processor for analyzing the original program. One way of constructing such a processor is the method of grammatical analysis of the program, based on a formal description of the language syntax. Several algorithms for automatic construction of the processor have already been developed. Such algorithms are called constructors.

It is noted that the most successful of them is the constructor based on transition matrices. The methodology of the construction was proposed by K. Samuelson and F. L. Bauer (Comm. ACM, 1963, 6, No 8), and the practical algorithm for the realization was proposed by O. Gries (see Comm. ACM, 1968, 11, No 1). A description is given of the principles of operation of the Gries algorithm.

1/3

USSR

MEDVEDEV, V. D., Tr. Mosk. ekon. stat. in-ta, Part 1, 1973, pp 69-82

Chapter 1 gives the fundamental terminology. The problem of grammar transformation is an important concept in the operation of the algorithm. Chapter 2 is devoted to obtaining broadened operational grammars and the construction of the discriminator; Chapter 3 discusses the practical realization of the constructor. In practical application, the syntactical discriminator for the operational language consists of two principal parts: the transition matrix and the set of information subprograms.

It is noted that the constructor using the transition matrix has several definite advantages: the method of a transition matrix is, most likely, the fastest of all known universal methods of grammar analysis; it is excellent for detecting syntactical errors; in view of the fact that ~ 60% of the matrix elements indicate inadmissible symbol pairs, these elements can provide information regarding errors or even correct them.

Another advantage is that the discriminator algorithm, consisting of a set of subprograms, permits a convenient and easy substitution of the semantic rules in the subprograms even after the construction of the discriminator; the matrix technique simplifies the design of the segmented memory distribution.

2/3

USSR

MEDVEDEV, V. D., Tr. Mosk. ekon, stat. in-ta, Part 1, 1973, pp 69-82

The only defect of the method is its need for a large memory, but this can be overcome by organizing the analysis by a combination method (in the verification of many of the constructions, the transition matrix is used; for other cases there are different methods which may not be as fast but require a smaller memory). Two illustrations, bibliography of five. N. V.

3/3

- 18 -

USSR

UDC: 621.373.530.245.6

ALPATOV, Yu. V., DEMIDOV, M. N., MEDVEDEV, V. D., SENOV, G. S., SIBIREV, A. V.

"A Single-Mode Gas Laser With Stabilization of Emission Power"

Elektron. tekhnika. Nauchno-tekhn. sb. Gazorazryadn. pribory (Electronic Technology. Scientific and Technical Collection. Gas-Discharge Devices), 1970, vyp. 2(18), pp 64-70 (from RZh-Radiotekhnika, No 11, Nov 70, Abstract No 11D265)

Translation: The paper describes a single-mode helium-neon gas laser which has stable emission power and stable position of the optical axis.

USSR

UDC 8.74

DANELYAN, T. YA., MEDVEDEV, V. D., DROBIN, S. V.

"Possible Direction of the Construction of an All-Purpose Algorithm for Non-syntactic Analysis of Language Programs"

V sb. Teoriya yazykov i metody postroyeniya sistem programmir. (Language Theory and Methods of Constructing Programming Systems--collection of works), Kiev-Alushta, 1972, pp 369-380 (from RZh-Kibernetika, No 12, Dec 72, Abstract No 12V466)

No abstract

1/1

USSR

UDC 681.121.842

MEDVEDEV, V. F., UDODOV, A. G.

"Measurement of Flow Rates of Gas-Liquid Mixtures by Standard Diaphragms"

Tr. Metrol. In-tov SSSR [Works of Metrology Institutes, USSR], 1972, No 135 (195), pp 93-97, (Translated from Referativnyy Zhurnal, Metrologiya i Izmeritel'naya Tekhnika, 1972, No 5, Abstract No 5.52.750).

Translation: The flow of air-water mixtures was studied through standard diaphragms with various moduli in the interval of Reynolds numbers $Re = 10^4 - 10^5$ throughout the entire range of change of gas content of the mixture. It was found that the dependence of flow factor on Re number is manifested more strongly, the lower Re , the flow factor increasing with decreasing Re . As Re increases, this dependence becomes less clear, and with sufficiently high Re , the flow factor can be considered constant. The influence of diaphragm modulus and volumetric content of gas with the mixture on flow factor is demonstrated. 3 Figures; 3 Biblio. Refs.

1/1

USSR

UDC: 652.98

MEDVEDEV, V. I., PEREPETCHIKINA, Ye. A.

"Results of a Laboratory Check on the Concentration of Residual Quantities of Organochlorine Pesticides in Food Crops and Fodder According to Materials of the Vil'nyus Sanitation and Epidemic-logical Station"

V sb. Gigiyena primeneniya, toksikol. pestitsidov i klinika otravl. (Pesticides -- Safety Measures in Using, Toxicology, and the Poison Clinic--collection of works), vyp. 9, Kiev, 1971, pp 71-77 (from RZh-Khimiya, No 7, Apr 72, Abstract No 7N581)

Translation: In 1959-1960, analyses were made of 10% samples of the air and 600 samples of food products (meat, eggs, milk and other products, vegetables, fruits, grain, etc.) for residues of DDT, DDE and DDD. The results of the analyses are given in the attached table. The percentage of DDT in the air and food is 0.0001 to 0.0002, and DDE and DDD are 0.0001 to 0.0002. The percentage of DDT in the food is 0.0001 to 0.0002, and DDE and DDD are 0.0001 to 0.0002. The percentage of DDT in the food is 0.0001 to 0.0002, and DDE and DDD are 0.0001 to 0.0002.

USSR

MEDVEDEV, V. I. and PEREKHOCHINA, Ye. A., Gigiyena prirodozashchity, Leningrad. Seriya: itsidov i klinika otrav. 1971, pp 71-77

green fodder and 4.0% in concentrated fodder. No hexachlorocyclopentadiene was detected in rough fodder. In cow's milk in 1963, up to 0.5 $\mu\text{g/liter}$ of DDT was found in 41% of the cases, and up to 0.6 μg of hexachlorocyclopentadiene was found in 15% of the cases. The percentage of the samples of other feed products contaminated with DDT or hexachlorocyclopentadiene (in cattle feed) is 17%. In 1970, no DDT or hexachlorocyclopentadiene was detected in rough fodder. DDT in quantity of 0.02 $\mu\text{g/liter}$ was detected in breast milk in 5% of the mothers examined, even though none had come into contact with pesticides in their work, and none had lots close to farms. A. I. Volyn.

USSR

UDC 519.2:621.391

MANOVTSEV, A. P. and MEDVEDEV, V. I.

"Methods of Compressing the Volume of the Results of Measuring Certain Statistical Characteristics of Random Processes"

Leningrad, Metody predstavleniya i apparaturn. analiz sluchayn. protsessov i poley. 3-y Vses. simpozium, Sekts. 2 -- Sbornik (Methods of Display and Machine Analysis of Random Processes and Fields, Third All-Union Symposium, Section 2 -- Collection of Works), 1970, pp 13-17 (from Referativnyy Zhurnal -- Matematika, No 6, June 71, Abstract No 6V227, by Ya. Kogan)

Translation: Under the condition that the observer is a considerable distance from the object observed, an algorithm for the irreversible representation of a random process was considered for the case in which the goals of the analysis are the evaluations of the correspondence of the type of the distribution of the process and its first moments. The proposed algorithm is based on the use of percentage points of the distribution. It is assumed that the process investigated is a quasisteady state, with normal one-dimensional distribution.

1/1

- 32 -

USSR

UDC: 621.396.946

MEDVEDEV, V. I., GASOV, V. M., Active Members of the Scientific and Technical
~~Society~~ of Radio Engineering, Electronics and Communications imeni A. S. Popov

"An Algorithm for Predicting the Time of Outer-Space Communications Periods With
Limited Transmitter Power"

Moscow, Radiotekhnika, Vol. 26, No 6, Jun 71, pp 93-96

Abstract: An algorithm is proposed for predicting the time of communications
periods between ground-based radio centers with transmitters of limited power
at any point on the earth's surface and artificial satellites circling the
earth in any orbit.

1/1

1/2 031 UNCLASSIFIED PROCESSING DATE--18SEP70
TITLE--STRUCTURE AND ELECTRON ADSORPTION PROPERTIES OF SODIUM FILMS ON THE
(011) FACE OF TUNGSTEN -U-
AUTHOR-(03)-MEDVEDEV, V.K., NAUMOVETS, A.G., FEDORUS, A.G.
COUNTRY OF INFO--USSR
SOURCE--FIZ. TVERD. TELA 1970, 12(2), 375-85
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, PHYSICS
TOPIC TAGS--SODIUM, METAL FILM, TUNGSTEN, ELECTRON, ADSORPTION, PHYSICAL
PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1984/0131

STEP NO--UR/0131/70/011/002/0375/0335

CIPC ACCESSION NO--AP0054927

UNCLASSIFIED

2/2 031

UNCLASSIFIED

PROCESSING DATE--18SEP70

CIRC ACCESSION NO--AP0054927

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE STRUCTURE OF NA FILMS ADSORBED ON THE W (011) FACE AT 77-400DEGREES K WERE STUDIED BY USING SLOW ELECTRON DIFFRACTION. THE ADSORBED FILMS EXHIBITED A SERIES OF ORDERED STRUCTURES WHICH ARE FORMED AT VARIOUS CONCNS. OF NA ATOMS. ORDER DISORDER TRANSITIONS WERE ALSO OBSD. DATA ON THE NA FILM STRUCTURE ARE COMPARED WITH CONTACT POTENTIAL DIFFERENCE DATA ON THE WORK FUNCTION AND THE CONCEN. OF NA ATOMS ADSORBED ON THE W (011) FACE. DISTORTION OF THE LONG RANGE ORDER IN NA MONOLAT. FILMS DOES NOT CHANGE THE WORK FUNCTION. REPULSIVE FORCES ARE PRESENT BETWEEN THE ADSORBED ATOMS ON THE (011) FACE OF W.

UNCLASSIFIED

Cardiovascular Diseases

USSR

UDC 616.1-057-02:621.3.029.6

MEDVEDEV, V. P., Institute of Postgraduate Medicine imeni S. M. Kirov, Lenin-grad

"Cardiovascular Disease in Persons Exposed in the Past to Microwaves"

Moscow, Gigiyena Truda i Professional'nyye Zabolevaniya, No 3, 1973, pp 6-9

Abstract: The results of physical examinations, EKG recordings, exercise tests, blood studies, etc. of 80 engineers and administrative officials age 30 to 50 exposed for many years to microwaves and then transferred to other work but not for health reasons 4 to 7 years before the present investigation were found to have a significantly higher incidence of coronary disease, hypertension, and disturbances of lipid metabolism than the controls. The number of persons with a hereditary predisposition to heart disease was approximately the same in both groups, but disorders developed much more often in those previously exposed to microwaves. For example, of 21 persons in the 40-to 49-year group, symptoms of hypertension and coronary insufficiency were detected in 15 (72%) compared with only 2 of 16 (12%) in the control. Microwaves may be regarded as a nonspecific factor that under certain conditions interferes with adaptation to unfavorable influences, thereby promoting an earlier onset of cardiovascular disease, especially in those predisposed to it.

1/1

USSR

UDC 519.217

GERGEY, T., MEDVEDEV, V. P.

"Study of Ergodic Characteristics of Discrete Single-Line Queueing System"

Teor. Kibernetiki. vyp. 3 [Theory of Cybernetics, No 3 -- Collection of Works], Kiev, 1970, pp 98-112, (Translated from Referativnyy Zhurnal, Kibernetika, No. 6, 1971, Abstract No 6 V71 by Ye. Kashafutdinova).

Translation: The final probability of loss of a request in a single-line discrete queueing system with a single-place line with constant servicing time N (units of time) and maximum waiting time of requests in the line a (units of time) with a Bernoulli flow at the input is determined. The functioning of the system is described by an ergodic Markov chain $\{\xi_n\}$ ($n = 0, 1, \dots$). The limiting probability as $n \rightarrow \infty$ that the servicing system will be busy is determined. Regularities of the chain dependence between probabilities of states are determined and a semi-Markov process is constructed. Systems of equations for the final probabilities of states of the imbedded chain of the semi-Markov process are solved, and the solution is used to analysis the initial Markov chain. The behavior of the final probabilities of loss with various parameters of the system is illustrated using graphs produced by computer.

USSR

UDC: 621.317.7:621.391.822

MEDVEDEV, V. V.

"A Method of Checking Noise Factor Meters Types Kh5-5A, Kh5-6, Kh5-7 and Kh5-8 (a Brief Report)"

Tr. VNIi fiz.-tekhn. i radiotekhn. izmereniy (Works of the All-Union Scientific Research Institute of Physicotechnical and Radio Engineering Measurements), 1970, vyp. 2(32), pp 119-121 (from RZh-Radiotekhnika, No 5, May 71, Abstract No 5A197)

Translation: A simple method is considered for checking serially produced noise factor meters. A table of corrections for different segments of the scale may be given for the verified noise factor meter to increase precision. Bibliography of two titles. Resumé.

1/1

USSR

UDC 669.71.053.4.094

MAL'TS, N. S., BERNSHTEYN, V. A., MEDVEDEV, V. V., BAGAYEV, A. S.

"Thermotechnical Studies on an Experimental Device for High-Temperature Leaching of Bauxites"

Tr. Vses. n.-i. i proyekt. in-ta alyumin., magn. i elektrod. prom-sti
(Works of the All-Union Scientific Research And Planning and Design Institute of Aluminum, Magnesium and Electrode Industry), 1970, No 70, pp 109-119 (from RZh-Metallurgiya, No 4, Apr 71, Abstract No 4G141)

Translation: Results are presented from studies of the kinetics of incrustation of the heat-exchange surface and the heat-exchange conditions during the process of heating of bauxite pulp in the experimental device for high-temperature leaching of bauxites. The nature of incrustation of the heat-exchange surface in a broad temperature range of heating of bauxite pulp and also the effect of individual factors on this process are determined. There are 4 illustrations and 1 table.

1/1

- 4 -

Miscellaneous

USSR

UDC 621.771.23

ZELICHENOK, B. Yu., VINOGRADOVA, A. I., MEDVEDEV, V. V., MUI'KO, G. N.,
and KATRICHENKO, K. P.

"Factors Affecting the Expenditure of Metal in Sheet Rolling"

Moscow, Stal', No 2, Feb 71, pp 139-142

Abstract: This article reports on mathematical and statistical analyses made at the Orsko-Khalilov Metallurgical Combine of the factors determining variations in sheet steel lengths. Personnel of the plant have also computed the probability of obtaining ordered sheet lengths so that they can make an optimal choice of slab weights for their type-2800 thick-sheet mill. The finished sheets of 17G1S steel are 12.5 mm thick, 1.88 meters wide, and 12.1 meters long. To suit the welding procedures at the Chelyabinsk Tube-Rolling Plant to which they are sent to be welded into tubes of 1220-mm diameter for carrying gas, however, the lengths of these sheets may be 11.9, 11.5 or 11.3 meters. The article offers formulas and statistical data for computing the proper sheet lengths and other production parameters.

1/1

USSR

UDC 620.171.32:669.295:669.015.4

KIDIN, I. N., MEDVEDEV, V. V., and KIRIDONOV, E. M., Moscow Institute of Steel and Alloys

"The Effect of Heating Rate on the Mechanical Properties of Cold-Deformed Titanium"

Moscow, Izvestiya Vysshikh Uchebnykh Zavedeniy -- Chernaya Metallurgiya, No 9, 1970, pp 135-136

Abstract: The mechanical properties of cold-deformed VT1-0 titanium were studied under conditions of a continuous high rate of heating and under isothermal conditions after a high rate of heating. Samples of special form and dimensions were made of 0.2 mm thick sheet metal. Experimental and measuring techniques are briefly described. The results show that in a time interval of 1-200 sec before failure, the short-time heat resistance depends substantially on the heating rate. Temperatures for achieving plastic deformations of 0.2%, 0.5%, etc., are higher, the greater the rate of continuous heating.

1/1

USSR

UDC 532.526

MEDVEDEV, V. Ye.

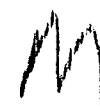
"Numerical Calculations of the Boundary Layer in a Two-Phase Working Medium"

V sb. 11-ya Vses. konf. po vopr. ispareniya, goreniya i gaz. dinamiki dispersn. sistem, 1972 (Eleventh All-Union Conference on Evaporation Problems, Combustion and the Gasdynamics of Disperse Systems, 1972 — Collection of Works), Odessa, 1972, p 65 (from RZh-Mekhanika, No 3, Mar 73, Abstract No 38819)

Translation: Profiles of the velocity, temperature, and density of phases in the boundary layer of a gas carrying solid particles were obtained through a computer calculation. The system of equations used was derived under the assumption that the gas and particles form a continuous medium. It was assumed that the particles consist of nonrotating identical spheres occupying a negligibly small volume. Particles collisions were neglected and the interphase interaction was taken into account in the equation of motion by introducing an aerodynamic force. T. A. Girshovich.

1/1

1/2 024 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--SMALL SIZE OF PULMONARY HEART -U-

AUTHOR--(03)-MEDVEDEV, YE.S., PODOLYAN, L.M., TUNKEL, R.S. 

COUNTRY OF INFO--USSR

SOURCE--TERAPEVTICHESKIY ARKHIV. 1970, VOL 42, NR 3, PP 55-58

DATE PUBLISHED-----70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--AUTOPSY, HEART DISEASE, LUNG, RESPIRATORY INSUFFICIENCY,
HYPERTROPHY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--1986/0823

STEP NO--UR/0504/70/042/003/0055/0058

EIRC ACCESSION NO--AP0102785

UNCLASSIFIED

2/2 024

UNCLASSIFIED

PROCESSING DATE--020CT70

CIRC ACCESSION NO--AP0102785

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE AUTHORS MEASURED
TELECENTROGRAPHICALLY THE HEARTS IN 70 PATIENTS WITH CARDIO PULMONARY
INSUFFICIENCY AND STUDIED AUTOPSY MATERIAL OF 60 CADAVERS OF CHRONIC
NONSPECIFIC DISEASES OF THE LUNGS IN DIFFERENT DEGREES OF CARDIO
PULMONARY INSUFFICIENCY. A GROUP OF PATIENTS WITH MITRAL STENOSIS WAS
USED AS CONTROL AND AUTOPSY MATERIAL STUDIED. THE SIZE OF THE HEART IN
PATIENTS WITH CARDIO PULMONARY INSUFFICIENCY PROVED TO BE MUCH SMALLER
THAN THAT IN PATIENTS WITH MITRAL STENOSIS. THE REVEALED HYPERTROPHY OF
THE VENTRICULAR WALLS, ESPECIALLY OF THE RIGHT ONE, THOUGH REVEALED IN A
DECOMPENSATED PULMONARY HEART PLAYS BUT INSIGNIFICANT ROLE IN THE
FORMATION OF THE SIZE OF THE HEART. A SMALL HEART IN PULMONARY
EMPHYSEMA IS EXPLAINED BY A REDUCED BLOOD SUPPLY TO THE HEART AND A DROP
IN DIASTOLIC FILLING OF THE CAVITIES DUE TO A DECREASED SUCTION OF THE
BLOOD FROM THE MAJOR VEINS BY THE CHEST, A FALL OF THE VENOUS TONE,
DECELERATION OF THE PERIPHERAL VENOUS CIRCULATION AND OVERFILLING OF THE
PERIPHERAL DEPOT WITH THE VENOUS BLOOD.

UNCLASSIFIED

USSR

UDC: 621.396.6-181.48

NAZAROV, G. V., NIKITIN, V. G., TSAR'KOV, A. N., MEDVEDEV, Yu.

"Group Mounting of Suspended Elements and External Leads on Integrated Circuit Boards"

Elektron. prom-st'. Nauch.-tekhn. sb. (The Electronics Industry. Scientific and Technical Collection), 1972, No 1, pp 95-99 (from RZh-Radio-tekhnika, No 8, Aug 72, Abstract No 8V271)

Translation: The paper analyzes the basic technological and design requirements for methods of group welding and soldering. Research results are presented on devices developed for group mounting of microcircuit crystals with rigid (ball) leads on substrates. Recommendations are formulated on selecting methods of mounting leads, crystals and substrates for various combinations of materials. Resumé.

1/1

- 45 -

USSR

UDC: 622.235

BORONIN, A. P., MEDVEDEV, YU. A., and STEPANOV, B. M., moscow

"Extended Electrical Pulse and the Dynamics of the Expansion of the Explosion Products of an Explosive Charge"

Novosibirsk, Fizika Goreniya i Vzryva, Vol 9, No 4, Jul-Aug 73, pp 541-550

Abstract: The authors use statistical treatment to represent an entire set of pulses, which were obtained on the basis of a unified methodology which ensures small distortions in the studied time interval, in the form of a generalized dependence which describes the field pulses at various distances from the explosions of charges which are tens and hundred of grams in mass. It appears that the time dependence of the pulses is of self-similar nature and that the shape of the extended pulse contains particulars which correlate with the self-similar rule for the motion of explosion products. It follows that a low-frequency pulse is related to the products of explosion. Since existing materials on this problem, both theoretical and experimental, are not conclusive, the authors used optical observation of the expansion of the explosion products together with the registration of field pulses in that time interval where registration was comparatively simple.

USSR

M

USSR

MEDVEDEV, Yu. V., Moscow Correspondence Pedagogical Institute

"Electromagnetic Properties of Superconductors With Strong Coupling"

Sverdlovsk, Zhurnal Metallov i Metallovedeniya, Vol 30, No 11, Nov 1987, pp 11-14

Abstract: The properties of anomalous superconductors in a weak, non-resonant magnetic field and in an arbitrary field near H_g have been studied in detail. This article presents a study of the problem of the critical superconducting field in superconductors with strong coupling and their behavior in a high frequency field on the basis of the theory of superconductors with strong electron-phonon interaction. A general expression is produced for the critical superconducting field of superconductors with strong electron-phonon interaction. The behavior of an anomalous superconductor in a high frequency field is studied.

1/1

MEDVEDEVA, A.P.

health statistics

INTEGRATION OF HEALTH STATISTICS WITH SOCIAL, DEMOGRAPHIC AND ECONOMIC
STATISTICS (MEETING OF THE EUROPEAN ECONOMIC COMMISSION)
Article by L.S. Sluchanko, A.P. Medvedeva (Moscow); Moscow, Sovetskoye Znanie
okhraneniye, Russian, No 4, 1977, pp 82-87

A joint meeting of the WHO European Regional Office and UN Statistical
and Economic Commission for Europe convened in Geneva, in April 1971. The chief
purpose of the meeting was to consider the plan of health care and health
statistics in social and economic statistics, to consider the possibility of
including health indices and characteristics in the system of national
accounting. The meeting was called upon to consider what health and
health care indices were needed for this purpose, the methods of obtaining
them, and to determine whether such indices were comparable between nations
and to other statistical systems.

There were 50 representatives from 24 countries at the meeting. The
USSR was represented by A.P. Medvedeva (Central Statistical Administration) and
L.S. Sluchanko (Central Institute for Advanced Training of Physicians).

The main issues on the agenda were: 1) Public health statistics (defin-
ition of terms, classifications; criteria of health and illness). 2) Integra-
tion of public health statistics in the system of demographic and social
statistics. 3) Integration of public health statistics in the system of
national economy accounting.

With reference to the first item, the report of Mr. Dolezal who
spoke on behalf of the WHO European Regional Bureau was discussed. The author
dealt with the main indices and terms that are used to describe health (birth
rate, fertility rate, overall, child, and age-related death rates). Little
was said about physical development and disability. Morbidity involving
temporary disability occupied a significant place. He indicated the existing
and proposed classifications of disease and causes of death, surgical operations,
specialties, institutions, etc. There was brief discussion of indices of
work of medical institutions.

1/2 008 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--ALKALINE SPLITTING OF BETA ACETYLENIC ALCOHOLS -1/-
AUTHOR--(04)-VLASOV, V.F., MEDVEDEVA, A.S., CHICHKAREVA, G.G., SAFRONOVA,
L.P.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKADE. NAUK SSSR, SER. KHIM. 1970, (4), 944-5
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--ALCOHOL, CHEMICAL DECOMPOSITION, ACETYLENE, DEHYDRATION
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--3006/1305 STEP NO--UK/0062/70/000/004/0944/0945
CIRC ACCESSION NO--AP0134980
UNCLASSIFIED

2/2 008

UNCLASSIFIED

PROCESSING DATE--20NOV70

CIRC ACCESSION NO--AP0134980

ABSTRACT/EXTRACT--(U) CP-01 ABSTRACT. HEATING 15 G 1-PENTYN, 4.0L WITH 2.5 G KOH UNDER ET SUB2 O RESULTED IN INTENSIVE EVOLUTION OF GAS AT 55-60DEGREES, CONTG. C SUB2 H SUB2 AND MECTRIPLE BOND CH; AT 95-100DEGREES THE GAS CONSISTED OF MEC TRIPLE BOND CH PREDOMINANTLY. 1,6-DIYN, 4.0L AND KOH HEATED TO 75-90DEGREES GAVE C SUB2 H SUB2, BUT AT 100-150DEGREES GAVE MAINLY MEC TRIPLE BOND CH. THE LATTER ALC. DECOMPO. LESS READILY THAN DID THE FORMER. EVIDENTLY THE DECOMPN. INTO C SUB2 H SUB2 AND ALKYLENE OXIDE AT THE LOWER TEMP. IS ALTERED BY HIGHER TEMP. INTO FORMATION OF UNSATC. ALC., WHICH UNDERGOES ALLERIC REARRANGEMENT AND DEHYDRATION TO FORM MEC TRIPLE BOND CH AND RCHO. THE REACTION WAS FOLLOWED BY CONVERSION OF THE GASEOUS PRODUCTS INTO CU SALTS AND THEIR IDENTIFICATION. FACILITY: IRKUTSK. INST. ORG. KHIM., IRKUTSK, USSR.

UNCLASSIFIED

MEDVEDEVA, A.V.

metallic coatings

UNCLASSIFIED

(1) Tetraeryptenadienylzirconium, a New Agent for the Deposition of Zirconium Coatings on Surfaces—USSR

Dr. H. Hoff-S. L. 11/29

b2

In a recent paper in the "Journal of General Chemistry of the USSR" A. V. Medvedeva and A. A. Medvedev describe a new method for the deposition of zirconium coatings on surfaces. The surface to be coated is heated to a high temperature and brought into contact with the vapor of an organometallic or metal halide compound which is then decomposed, depositing a thin metallic coating and emitting a gaseous decomposition product.

Zirconium metal and zirconium coated metals and alloys have many important industrial applications. These coatings are very hard, refractory, and resistant to corrosion by acids, alkalis, sea water, high temperature water and steam, and are thus used extensively by the chemical industry. Because of its low absorption cross section for neutrons, zirconium has found nuclear energy applications.

Until recently, production of zirconium coatings by the method described above involved the use of zirconium halides with the concurrent formation of corrosive halogen decomposition products. The authors report that the corrosion problem can be eliminated by the use of tetraeryptenadienylzirconium, $(C_8H_8)_4Zr$, a solid yellow crystalline substance.

Tetraeryptenadienylzirconium was synthesized by the reaction of eryptenadienylnitride and zirconium tetrachloride and the optimum conditions for this reaction were found.



UNCLASSIFIED

USSR

UDC 614.445(497.24):576.851

BARAGANOVA, E. YE., ZAKUTINSKAYA, N. A., NAMEDJAN, A. V., Candidate of Medical Sciences, MAIBSOVA, S. A., and ~~REZVEZDOVA, E. P.~~, Azerbaydshan Anti-plague Station

"The Vibrio Content in Rivers and Some Open Water Basins Bordering on Azerbaydshan," (Report One)

Baku, Azerbaydshanskiy Meditsinskiy Zhurnal, No 5, May 71, pp 50-53

Abstract: A study was made of the vibrioflora (particularly cholera vibrios) of the Araks river, Apsheronkiy canal, and Caspian sea, all waters bordering on Iran and long known as an epidemiological focus of cholera, from which the disease frequently spread to Russia. During the years 1967-1970 samples gathered from the waters of the Araks river, Apsheronkiy canal, and Caspian Sea contained 96, 197, and 146 different types of vibrios comprising six groups (Weiberg's classification). Most types were obtained in the months between May and October. Most numerous and epidemiologically interesting were the vibrios in group one, which included also the El Tor Group serotype. Of the vibrios in this group, 18-18.7% of the total number of vibrios gathered from the waters of Araks river and the canal and 8.9% of those gathered from the Caspian Sea were agglutinated by cholera O serum in different 1/2

USSR

BABAGANOVA, E. YE., et al., Azerbaydzhanskiy Meditsinskiy Zhurnal, No 5, May 71, pp 50-53

dilutions. On the basis of Heiberg's classification the vibrios gathered from Araks river were grouped as follows: group I contained 29.2%, group II -- 23.6%, group III -- 2.2%, group IV -- 14.6%, group V -- 1.2%, and group VI -- 29.2%; from Apsheronkiy canal: group I -- 52.3%, group II -- 32%, group III -- 1.5%, group IV -- 0.5%, group V -- 1.5%, and VI -- 11.2%; from Caspian Sea: group I -- 51.4%, group II -- 12.3%, group III -- 4.7%, group V -- 13%, group VI -- 18.6%. No group IV vibrios were found in the Caspian Sea. The medical and sanitary workers of Azerbaydzhan SSR have been warned that the presence of El Tor and other vibrios which are agglutinated by cholera O serum presents a constant threat of a cholera epidemic outbreak, and that at all times the necessary prophylactic measures should be enforced.

2/2

- 50 -

USSR

UDC: 911.3.616.331-CO2

BAROYAN, O. V., MEDEVEDEVA, G. I., SHATKIN, A. A., PICHUSEKOV, A. V., BESHKINA, S. R.,
ARUTYUNOVA, I. A., MARTYNOVA, V. R.

"Immunological-Epidemiological Research on Tick-Borne Encephalitis"

V sb. Materialy XV Vses. nauchn. konferentsii epidemiologov, mikrobiologov i infektionnykh
tekstov dokl. Ch. I (Proceedings of the 15th All Union Conference of Epidemiolo-
gists, Microbiologists and Specialists in Infectious Disease, Thesis Reports
Part I -- collection of works) Moscow, 1970, pp 186-187 (From RZh-36. Meditsin-
skaya geografiya, No 1, Jan 71, Abstract No 1.36.86)

[No abstract]

USSR

Immunology

UDC 576.858.7(07).3-036.22+616-022.14

POZODINA, V. V., KORESHKOVA, G. V., BOCHKOVA, N. G., SENQUTA, N. B., and
MEDVEDEVA, G. S., Institute of Poliomyelitis and Viral Encephalitides,
Academy of Medical Sciences USSR

"Mixed Arbovirus Infections (the Diagnostic, Genetic, and Vaccine Aspects of
the Problem"

Tashkent, Meditsinskiy Zhurnal Uzbekistana, No 8, Aug 73, pp 89-90

Abstract: The ecology of arboviruses permits a combined source of infection. Simultaneous infection with Japanese encephalitis and other group A and B arboviruses were observed. Features in the growth of experimental mixed infections were studied for group A (Sindbis + Getis, group B (West Nile + Japanese encephalitis), and group A + B (West Nile + Sindbis). Several different immunological phenotypes were observed and characterized. The interaction of the individual virus type in a mixture may be related to its phenotype. Differences were observed in the experimental A + B mixtures.

1/1

USSR

UDC 581.19

KADZHAYA, A. S., MEDVEDEV, B. I., MEDVEDEVA, I. F., and Associate Member of the USSR Academy of Sciences KUZIN, A. M., Institute of Biophysics, USSR Academy of Sciences, Pushchino-na-Oke

"The Chemical Nature of Biologically Active Phytolipopolysaccharides"

Moscow, Doklady Akademii Nauk SSSR, Vol 197, No 6, 21 Apr 71, pp 1,432-1,434

Abstract: A complex lipopolysaccharide has been isolated from grape membranes. Close to 0.22 g phytolipopolysaccharide (PLP) is isolated from 100 g dry grape membranes. The biological activity was tested on mice and rats after they had been irradiated with gamma-rays from a Cs-137 source in doses of 700 and 800 roentgen, respectively at a rate of 450 roentgen/min. Survival of the irradiated animals was enhanced by introduction of PLP. An attempt to separate the PLP complex led to a sharp drop in biological activity (a survival of not more than 20%). The following total contents (in %) were determined: lipids, 54.9 ± 1.8 , carbohydrates, 27.05 ± 0.43 , proteins, 8.56 ± 0.18 ; mineral matter, 5.14 ± 0.31 ; the elementary analysis yielded: C, 59.1 ± 0.2 ; H, 9.05 ± 0.12 ; N, 1.64 ± 0.4 ; P, 1.43 ± 0.05 . The lipid component was studied by thin layer chromatography. Identification of the individual fractions was done by reference spots or using mixtures of known composition. The carbohydrate part of PLP was studied after hydrolysis in 1N HCl at 100°C for a 1/2

USSR

KADZHAYA, A. S., et al., Doklady Akademii Nauk SSSR, No 197, No 6, 21 Apr 71, pp 1,432-1,434

period of 4 hrs. The hydrolysate was extracted with chloroform. Some 2.33% of the carbohydrates went into the chloroform layer (the carbohydrates which are tightly bound by the lipids). Some 17.9% of the carbohydrate stayed in the aqueous layer, and close to 7% was lost. The hydrolysate carbohydrates were separated by paper chromatography. The individual sugars were studied using pure substances in four solvent systems. Glucose (4.48±0.42), galactose (6.81±0.53), and arabinose (5.93±0.68) were identified in the hydrolysate. No hexosamines were detected. The protein components were analyzed after separation by the phenol method. Isoleucine, tyrosine, and phenylalanine were found in quantities of 0.025-0.026 μ mole per 1 mg of separated protein; lysine, histidine, arginine, proline, and methionine were present in traces; glutamic acid and valine were detected in amounts of 0.030-0.034 μ mole; leucine and alanine were present in amounts of 0.043-0.047 μ mole, and serine, asparaginic acid and glycine were present in amounts of 0.053-0.057 μ mole. A comparison of the data with known analytical data of the best studied lipopolysaccharides of bacteria shows that PIP from grape membranes has a rather complex lipid composition and a comparatively simple carbohydrate content. The protein component must be studied in more detail.

2/2

UNCLASSIFIED

SICLION III SO: Selected Research Results

Research

Name: Institute of Biophysics, Pushchino

PCS-69 SEP 71

(U) During this quarterly reporting period, 25 new articles were identified from the Institute of Biophysics, Pushchino. On the basis of these articles, it was possible to identify 25 new personalities with the Institute. These personalities, the subjects of the articles, and the dates are given below:

Name	Research	Date
<u>Agarova, E. A.</u>	phosphorylation	1971 (34)
<u>Agarova, G. T.</u>	radiation effect	1970 (33)
<u>Agarova, D. F.</u>	radiation effect	1971 (34)
<u>Achips, Ya. I.</u>	hypoxia	1969 (33)
<u>Begadze, I. Y.</u>	radiation effect	1970 (33)
<u>Bunel, Ye. P.</u>	luminescence	1970 (33)
<u>Dmitriyeva, T. I.</u>	radiation effect	1970 (33)
<u>Dmitriyeva, V. A.</u>	blood plasma	1969 (33)
<u>Dmitriyeva, O. P.</u>	radiation effect	1970 (33)
<u>Dubrov, A. R.</u>	biochemical analysis	1971 (34)
<u>Gabelova, N. A.</u>	nucle physiology	1971 (34)
<u>Gerasim, Ye. E.</u>	radiation effect	1970 (33)
<u>Ivkova, M. N.</u>	serum albumin	1971 (34)
<u>Krasnik, V. S.</u>	phosphorylation	1971 (34)
<u>Khokhlova, G. K.</u>	nucle physiology	1971 (34)
<u>Kislov, A. N.</u>	salivary gland	1970 (33)
<u>Klyagina, V. P.</u>	oligonucleotides	1970 (34)
<u>Korol, B. A.</u>	radiation effect	1971 (34)
<u>Koshelova, G. N.</u>	biochemical analysis	1971 (34)

1 IN 1 A 6 177

Kuzina, B. V.	tissue culture	1970 (47)
Markovich, D. S.	lactate dehydrogenase	1971 (45)
Kudryeva, I. V.	radiation effect	1971 (44)
Peshkova, L. V.	phosphorylation	1971 (43)
Prokovich, L. A.	antibiotic	1970 (40)
Rodionova, M. A.	mitochondrion	1971 (31)
Shchepkin, V. N.	phosphorylation	1971 (29)
Srobov, Ye. M.	infection/vibration	1970 (32)
Tsvetkov, T. D.	radiation effect	1970 (33)
Ushakov, N. V.	blood plasma	1969 (20)
Vilenchik, M. N.	lactate dehydrogenase	1971 (42)
Zaryanin, A. A.	radiation effect	1970 (35)
	muscle physiology	1971 (41)

Dobry and Koshcheyev (41) are associated with the laboratory of Cell Biophysics at the Institute. Reference 32 above is of special interest since it presents an investigation of combined stresses, i.e., radiation and vibration. In addition to the above articles, five of the twenty-five (54-58) were authored by persons already identified with the Institute of Biophysics, Pushchino. Reference 35 associates the authors of the article, L. V. Stashenko, V. L. Kabanova, and A. M. Kurin, with the Department of Radiobiology at the Institute.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--0200170
TITLE--HYDROGENATION OF M AND P-PHENYLENEDIAMINES ON RUTHENIUM DIOXIDE -U-
AUTHOR--(05)-GENKINA, YE.V., MALIMONOVA, A.B., MEDVEDEVA, I.M., ZENKINA,
A.S., PYZHENKO, L.M.
COUNTRY OF INFO--USSR
SOURCE--ZH. VSES. KHIM. ODSHCHEST. 1970, 15(1) 118
DATE PUBLISHED-----70
SUBJECT AREAS--CHEMISTRY
TOPIC TAGS--CATALYTIC HYDROGENATION, GAS CHROMATOGRAPHY, ANILINE,
CYCLOHEXANE, PHENYLENE, DIAMINE, RUTHENIUM COMPOUND
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1992/1412 STEP NO--UR/0063/70/015/001/0118/0118
CIRC ACCESSION NO--AP0112406
UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--02OCT70

CIRC ACCESSION NO--AP0112406

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. HYDROGENATION OF M AND P-C SUB6 H SUB4 (NH SUB2) SUB2 AT 100-800DEGREES-180-200 IN MEQH OR DIOXANE OVER RUJ SUB2 AND EXAMN. OF THE PRODUCT BY GAS CHROMATOG. WAS REPORTED. ALONG WITH 1,3 AND 1,4,DIAMINOCYCLOHEXANE, THE REACTION GAVE PHNH SUB2 AND CYCLOHEXYLAMINE, WHICH PROVED THAT A PARTIAL DEAMINATION TOOK PLACE EVEN AT 100-200DEGREES. THE YIELD OF PHNH SUB2 WAS 10-15PERCENT AND THAT OF CYCLOHEXYLAMINE 1-2PERCENT.

UNCLASSIFIED

1/2 015 UNCLASSIFIED PROCESSING DATE--27NOV70
TITLE--THERMOCOUPLE FOR MEASURING LOW TEMPERATURES -U-

AUTHOR--(03)-ALEKSAKHIN, I.A., DUKHOVLINOVA, N.O., MEDVEDEVA, L.A.

COUNTRY OF INFO--USSR

SOURCE--U.S.S.R. 267,121

REFERENCE--OTKRYTIYA, IZOBRET., PROM. OBRATSY, TOVARNYE ZNAKI 1970,
DATE PUBLISHED--01APR70

SUBJECT AREAS--METHODS AND EQUIPMENT

TOPIC TAGS--PATENT, THERMOCOUPLE, COPPER CONTAINING ALLOY, IRON CONTAINING
ALLOY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED

PROXY REEL/FRAE--3003/1776

STEP NO--UR/0482/70/000/000/0000/0000

CIRC ACCESSION NO--AA0130609

UNCLASSIFIED

2/2 015

UNCLASSIFIED

PROCESSING DATE--27NOV70

CIRC ACCESSION NO--AA0130609

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THERMOCOUPLES FOR MEASURING LOW TEMPS. CONTAIN A POS. CU THERMOCOUPLE LEG. TO EXPAND THE RANGE OF MEASURABLE TEMPS. UP TO 300DEGREESK, THE NEG. THERMOCOUPLE LEG WAS MADE FROM AN ALLOY CU 0.01-0.5PERCENT FE ALLOY.

UNCLASSIFIED

UDC: 621.385.64

USSR

KALASHNIKOV, V. G., MEDVEDEVA, L. I., PUSHKAREV, A. G.

"An M-Type Instrument"

Moscow, Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 26, 1970, Soviet Patent No 278905, Class 21, filed 7 Aug 69, p 70

Abstract: This Author's Certificate introduces an M-type instrument such as a co-axial or coaxially inverse magnetron with high-speed adjustment. The instrument contains a stabilizing resonator and a rotating tuning element which has slots and is located inside the stabilizing resonator. As a distinguishing feature of the patent, the adjustment range is extended by placing additional resonators in the end wall of the stabilizing resonator. The number and sizes of these additional resonators are equal to the number and sizes of the slots on the rotating tuning element.

1/1

USSR

UDC 621.395.64 (089.8)

KALASHNIKOV, V.G., MEDVEDEVA, L.I., PUSHKAREV, A.G.

"M-Type Device"

USSR Author's Certificate No 278905, filed 7 August 1969, published 24 May 1971
(from RZh--Elektronika i yeye primeneniye, No 3, March 1972, Abstract No 3A70P)

Translation: A M-type device is proposed, e.g., a coaxial or a coaxially inverted magnetron with high-speed retuning, which contains a stabilizing cavity (C) and a rotary retuning element located inside the stabilizing C and which has a slot. With the object of increasing the range of retuning, additional C are located in the side wall of the stabilizing C, with the number and size of the additional C equal to the number and size of the slots on the rotary retuning element.

1/1

1/3. 027 UNCLASSIFIED PROCESSING DATE--16OCT70
TITLE--SOLID SOLUTIONS IN THE PB SUB2 CDWD SUB6NEGATIVE "PB SUB2 UCMOU
SUB6" SYSTEM -U-
AUTHOR-(03)-BELYAYEV, I.N., MEDVEDEVA, L.I., BOGATIN, A.S.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, NEORG. MATER. 1970, 6(3), 597-9
DATE PUBLISHED-----70
SUBJECT AREAS--MATERIALS
TOPIC TAGS--SOLID SOLUTION, LEAD COMPOUND, CADMIUM COMPOUND, MOLYBDENUM,
CURIE POINT, SINTERED ALLOY
CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--1996/0829 STEP NO--UR/0363/70/006/003/0597/0598
CIRC ACCESSION NO--AP0118006
UNCLASSIFIED

2/3 027

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118006

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE PBO-COMOD SUB4 AND PB SUB2 COMOD SUB6-PBCOMOD SUB6 SYSTEMS WERE STUDIED. A COMPARISON OF INTERPLANAR SPACINGS OF SAMPLES OF THE PBO-COMOD SUB4 SYSTEM AS OBTAINED FROM POWDER DIFFRACTION PATTERNS SHOWED THAT PB SUB2 COMOD SUB6 DOES NOT FORM IN THAT SYSTEM. ALL COMPNS. HELED TO 400DEGREES WERE MIXTS. OF THE STARTING COMPONENTS. POWDER PATTERNS OF THE SAMPLE OF COMPN. OF 10PERCENT COMOD SUB4 SHOWED THE PRESENCE OF A PHASE DIFFERENT FROM THE STARTING COMPONENTS, NAMELY THE PB SUB2-MOD SUB5 PHASE. THE SUBSTITUTION OF W BY MO IN THE COMPD. PB SUB2 COMOD SUB6 WAS ACCOMPLISHED BY SINTERING SAMPLES OF COMPN. PB SUB2 COMOD SUB6 WAS SUBX) O SUB6 (X EQUALS 0.05-0.95). THE SAMPLES WERE SINGLE PHASE WITHIN THE REGION TO X EQUALS 0.5. AT HIGHER X, PBO AND PBMOD SUB4 ALSO FORMED IN ADDN. TO THE LIMITED SOLID SOLNS. PB SUB2 COMOD SUB6 (W SUB1-X MO SUBX) O SUB6. THE SOLID SOLNS. ARE STABLE TO 900DEGREES. IN VIEW OF THE CLOSENESS BETWEEN THE IONIC RADII FOR W PRIME6 POSITIVE AND MO PRIME6 POSITIVE, THE LATTICE PARAMETERS OF THE SOLID SOLNS. DO NOT DIFFER APPRECIABLY FROM THE PARAMETERS FOR PB SUB2 COMOD SUB6 AND ARE EQUAL TO A EQUALS C EQUALS 4.156, B EQUALS 4.074 ANGSTROM, AND BETA EQUALS 91DEGREES0 PRIME. THE EXISTENCE OF SOLID SOLNS. IN THE 2PBO-COMOD SUB1-X MO SUBX) O SUB4 SYSTEM HAS BEEN CONFIRMED ALSO BY DTA DATA AS WELL AS BY THE MEASUREMENTS OF THE TEMP. DEPENDENCE OF PERMITTIVITY. THE PHASE TRANSFORMATION AT 402DEGREES WAS DETD. ON THE HEATING CURVE OF THE PURE PB SUB2 COMOD SUB6 SAMPLE.

UNCLASSIFIED

3/3 027

UNCLASSIFIED

PROCESSING DATE--16OCT70

CIRC ACCESSION NO--AP0118006

ABSTRACT/EXTRACT--THE CURIE POINT DECREASES WITH INCREASING MO CONTENT IN THE SOLID SOLNS.; FOR PB SUB2 CDWO SUB6 IT IS 400DEGREES, AND FOR PB SUB2 CD(W SUB0.9 MO SUB0.1)O SUB6 IS IT 392DEGREES. FACILITY: ROSTOV. GDS. UNIV., ROSTOV, USSR.

UNCLASSIFIED

USSR

UDC 621.396.75

KOMAROV, G. A., LARIONOV, A. S., MEDVEDEVA, L. T., PRAVDIKHIN, V. M.

"Discriminator of a Spatial Delay Tracking Meter"

Tr. Uralskogo politekhn. in-ta (Works of Urals Polytechnical Institute), 1970, Collection 183, pp 74-79 (from RZh-Radiotekhnika, No 8, Aug 70, Abstract No 8G91)

Translation: For direction finding methods using spaced reception, tracking meters are used based on correlation processing of the received signal. The discrimination characteristic of the tracking meter for measuring the relative delay of noise type signals received by the spaced arrays is proportional to the derivative of the correlation function of the signal. When necessary to measure the signal delay with respect to the envelope of the correlation function of the high-frequency noise type signal, the use of a discriminator is proposed in the form of a device operating by the principle of linear conversion of the signal spectrum to a spectrum with different intermediate frequencies with automatic phase compensation on the difference frequency. A calculation of the discrimination characteristic of the discriminator and the results of experimental testing are presented. There are three illustrations and a four-entry bibliography.

1/1

USSR

UDC 519.21

KUR'YANOV, B. F., MEDVEDVA, L. Ye.

"Harmonic Analysis of Stable Random Processes (The Use of the Fast Fourier Transform)"

Garmonicheskiy Analiz Statsionarnykh Sluchaynykh Protsessov, (S Ispol'zovaniyem Bystrogo Preobrazovaniya Fur'ye) [English version above], Moscow University, 1970, 63 pages (Translated from Referativnyy Zhurnal Kibernetika, No. 4, April, 1971, Abstract No. 4 V98K).

No Abstract.

1/1

USSR

UDC 547.26'117.541.49

PUVOVIK, A. N., MURATOVA, A. A., MEDVEDEVA, M. D., and YAKALIYEVA, L. N.,
Kazan State University imeni V. L. Ul'yanova-Lenina

"Study of the Reaction of Trialkyl Phosphites With Tin Alkyl Halides"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2402-2407

Abstract: A study was made of the reaction triethyl-, tri-normal-propyl-, and tri-normal-butyl phosphites with the monoethyl-, diethyl-, and triethyl-halides of tin, having the general formula $(C_2H_5)_n SnX_{4-n}$ for $X = Cl, Br, I$ and $n = 1, 2, 3$. The reaction was followed by differential thermal analysis (DTA) in conjunction with simultaneous measurements of the electrical conductivity. Reactions were carried out in anhydrous pentane under dry CO_2 at -10 to $-20^\circ C$. Complexes of two types were formed: $[(RO)_3P]_2 \cdot SnX_3C_2H_5$ and $[(RO)_3P]_2 \cdot SnX_3C_2H_5$. Both the temperature of the initiation of the thermal effect and the temperature of maximum thermal effect decreased in the order chlorine, bromine, and iodine. Both the reactivity and the acceptor strength decrease in the above order for SnX_4 and $C_2H_5SnCl_3$; however, the order is $1/2$

USSR

PUVOVIK, A. N., et al., Zhurnal Obshchey Khimii, Vol 42(104), Vyp 11, 1972, pp 2402-2407

reversed for the compounds $(C_2H_5)_2SnCl_2$ and $(C_2H_5)_3SnCl$. The authors explain this difference as being due to different reaction mechanisms. IR data and NMR data using Cl^{35} are also given.

2/2

- 20 -

USSR

UDC 547.26'118

PUDOVIK, M. A., TERENT'YEVA, S. A., MEDVEDEVA, M. D., and PUDOVIK, A. N.,
Institute of Organic and Physical Chemistry Imeni A. Ye. Arbuzov, Academy
of Sciences, USSR

"N-Acetylated Oxazaphospholanes and Phosphorinanes"

Leningrad, Zhurnal Obshchey Khimii, Vol 43 (105), No 3, Mar 73, p 679

Abstract: Heating equimolar quantities of N-acylated aminoalcohols or N-acetyl-o-aminophenol with complete amides of phosphorous acid or with the diamides of alkylphosphorous acids yielded a series of 2-substituted 3-acetyl-1,3,2-oxazaphospholanes and phosphorinanes: 2-diethylamino-3-acetyl-4,5-benzo-1,3,2-oxazaphospholane, b.p. 114-115°/0.04 mm; 2-ethoxy homologue, b.p. 95-96°/0.08 mm; 3-isopropoxy homologue, b.p. 109-111/0.05 mm; 2-diethylamino homologue, b.p. 92-93° (0.1 mm); and 2-diethylamino-3-acetyl-1,3,2-oxazaphosphorinane, b.p. 100-102°/0.025 mm.

1/1

- 22 -

USSR

UDC 547.26'118:541.4

PUDOVIK, A. N., MURATOVA, A. A., and MEDVEDEVA, N. D., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Reaction of Phosphinites With Titanium Tetrachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, p 469

Abstract: It was shown that O-alkyl diethyl- and O-alkyl di-phenyl-phosphinites react with titanium tetrachloride at -40 to -50°C to form extremely unstable intermediate crystalline complexes $(\text{R}_2\text{POR}')\cdot\text{TiCl}_4$. The structure of the resultant compounds is confirmed by IR-spectroscopy. Intermediate complexes $[(\text{C}_2\text{H}_5)_2\text{POR}]\cdot\text{TiCl}_4$ eliminate alkyl halide to form a viscous dark green product -- interstitial complex $(\text{C}_2\text{H}_5)_2\text{P}\cdot\text{OTiCl}_3$. Intermediate compound $[(\text{C}_6\text{H}_5)_2\text{POC}_2\text{H}_5]\cdot\text{TiCl}_4$ is analogously converted to $(\text{C}_6\text{H}_5)_2\text{P}\cdot\text{OTiCl}_3$.

1/1

- 34 -

USSR

UDC 547.26'118:541.49

PUDOVIK, A. N., MURATOVA, A. A., and MEDVEIEVA, M. D., Kazan' State University
Imeni V. I. Ul'yanov-Lenin

"Reaction of n-Butyl Ester of Diethylphosphinous Acid With Triethyl Chlorostannate"

Leningrad, Zhurnal Obshchey Khimii, Vol 42 (104), No 9, Sep 72, pp 1910-1913

Abstract: The reaction of n-butyl diethylphosphinite with triethyl chlorostannate was investigated in detail. On the basis of differential-thermal analysis it has been shown that the reaction begins at 150-160° and is completed at 200-250°. Analysis of reaction products indicated that the reaction may go in two parallel directions: isomerization of the phosphinite with formation of a complex and an oxidation-reduction reaction between the donor and acceptor yielding several products. The later reaction is favored with increasing radicals of the phosphinite-alkoxy group and with transition from iodo- to bromo- to chloro-derivatives of tin.

1/1

USSR

UDC 547.26'118:541.49

PUDOVIK, A. N., MURATOVA, A. A., MEDVEDEVA, M. D., YARKOVA, E. T., and
LOGINOVA, E. I., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Investigation of the Reaction of Diethylphosphinous Acid Esters With
Trialkyl and Dialkyl Halides of Tin"

Leningrad, Zhurnal Obshchey Khimii, Vol 42(103), No 2, Feb 72, pp 327-333

Abstract: The authors study reactions of methyl, ethyl, n -propyl, isopropyl, n-butyl and n -hexyl esters of diethylphosphinous acid with triethyl and diethyl chlorides, bromides and iodides of tin. It was found that diethylphosphinous acid esters react with trialkyl and dialkyl halides of tin to form stable complexes containing trialkylphosphine oxide and an alkyl halide of tin. As the radical of the alkoxy group increases, the reactivity of the phosphinite in these reactions decreases. The activity of alkyl halides of tin drops with a transition from dialkyl to trialkyl halides, and also with a transition from iodine to chlorine derivatives of tin.

1/1

UDC 547.26'118:541.49

USSR

PUDOVIK, A. N., MURATOVA, A. A., MEDVEDEVA, M. D., and YANKOVA, E. G., Kazan' State University imeni V. I. Ul'yanov-Lenin

"Study of the Reactions of Phosphonite and Phosphinite Esters With Tin Tetrachloride"

Leningrad, Zhurnal Obshchey Khimii, Vol 41 (102), No 4. Apr 71, pp 766-771

Abstract: The reactions of trivalent-phosphorus-acid esters with SnCl_4 were carried out at a molar ratio of 2:1 in pentane or benzene at 0 to -15° under CO. When the precooled starting materials were combined, an exothermic reaction took place leading to the formation of crystalline products in most cases. It was determined that the reactions of ethyl-, phenylphosphonic, ethylphenyl-, and diphenylphosphinic acids with SnCl_4 occur in three stages: formation of the complexes $[\text{RR}'(\text{R}''\text{O})\text{P}]_2\cdot\text{SnCl}_4$, followed by their isomerization to $[\text{RR}'\text{R}''\text{P:O}]_2\cdot\text{SnCl}_4$, and in case of phosphonic acid complexes, elimination of alkyl halides with the formation of a P-O-Sn compound. The ease with which the first step occurs decreases in order of substituents: ethyl-, phenylphosphonic, phosphorous, ethylphenyl-, and diphenylphosphinic acid. The products are donor-acceptor type complexes in which the coordinate bond is formed by the phosphorus atom's unshared pair of electrons.

1/1

- 29 -

USSR

UDC 612.821.6

YAKOVLEVA, M. I. and MEDVEDEVA, M. V., Institute of Experimental Medicine,
Academy of Medical Sciences USSR, Leningrad

"Conditioned Regulation of Cardiac Activity and Respiration and Morphological
Changes in the Brains of Pigeons Exposed to a Constant Magnetic Field"

Moscow, Zhurnal Vysshey Nervnoy Deyatel'nosti, No 2, 1972, pp 288-293

Abstract: Conditioned cardiac and respiratory reflexes elicited in response to a tone (conditioned stimulus) and ammonia fumes (unconditioned stimulus) were studied in 5 pigeons exposed to a constant magnetic field (520 oersted) for 40 minutes to 2 hours in 10 to 15 sessions extending over a period of 3 weeks. Conditioned changes in cardiac function in the form of an accelerated heart beat were observed in only three of the pigeons from the very first sessions; the respiratory rate remained unaffected. Histological examination of brain slices from these birds revealed edema of nervous tissue, especially pronounced in the region of the corpus striatum, hyperplasia and hypertrophy of the glial elements. These morphological changes suggest that a constant magnetic field affects the metabolic processes, particularly those in the central nervous system. This mechanism would seem to be responsible for the changes in CNS regulation of cardiac activity induced by a constant magnetic field.

1/1

MEDVEDEVA, N. A.

JPRS 56176
14 February 1972

SOJPR65 55176
228 72
TDC 616-558.73-078.73:770.8.071.2

ACCURACY OF EXPRESS DIAGNOSIS OF INFLUENZA BY
THE FLUORESCENT ANTIBODY METHOD (Medicine)

Article by L. Ye. Kozlovskaya, G. M. Vashukova, Yu. M. Gorskova, E. A. Zaitseva, N. A. Medvedeva, T. V. Ivanova, and E. M. Gerasimova. All-Union Scientific Research Institute of Influenza, USSR Ministry of Health, Moscow, Zhurnal Virologii, No 6, 1971, submitted 30 November 1970, pp 714-721.

It is first reported in 1971 the application of the fluorescent antibody method to diagnose influenza in humans [1]. Since then much attention has been given to the study of that question.

In the present paper an attempt is made to make clear the accuracy of the immunofluorescent method of diagnosis of influenza in comparison with the possibilities of serological diagnosis.

Materials and Methods

The methods of making preparations of fluorescent antibodies and the procedure of immunofluorescent analysis have already been described [1,2,6].

As was shown by Buck and Gatt [3], the accuracy of a diagnostic method is composed of its sensitivity S_1 and its specificity S_2 . Sensitivity is the probability of making a correct diagnosis in a patient, and specificity is the probability of rejection of disease in a healthy person or a patient with another disease.

A study of the accuracy of the serological method of influenza diagnosis has been made on a group of volunteers on an experimental clinical model of influenza. In that case only those inoculated volunteers who gave a distinct clinical reaction were taken into consideration [1].

The accuracy of the immunofluorescent method was evaluated in the diagnosis of diseases during an epidemic of influenza in parallel with the indicated serological methods. In that case the sensitivity S_1 and specificity S_2

173 024 UNCLASSIFIED PROCESSING DATE--09OCT70
TITLE--STRUCTURE OF SURFACE LAYERS AND ITS EFFECT ON THE PROPERTIES OF
TRANSFORMER STEEL -U-
AUTHOR--(05)--GRIGURKIN, V.I., MUSKALEVA, L.N., MEDVEDEVA, N.N., ZEMSKIY,
S.V., CHERNENILOV, M.F.
COUNTRY OF INFO--USSR
SOURCE--IZV. AKAD. NAUK SSSR, SER. FIZ. 1970, 34(2), 297-301
DATE PUBLISHED-----70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--X RAY DIFFRACTION ANALYSIS, ELECTRON MICROSCOPY, METAL
ROLLING, TRANSFORMER STEEL, SILICON ALLOY, METAL SURFACE PROPERTY

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1994/1932

STEP NO--UR/0048/70/034/002/0297/0301

CIRC ACCESSION NO--AP0115743

UNCLASSIFIED

2/3 024

UNCLASSIFIED

PROCESSING DATE--09OCT70

CIRC ACCESSION NO--AP0115743

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. THE COMPN. AND STRUCTURE OF SURFACE LAYERS AND THE INCIDENCE OF SURFACE IMPURITIES IN TRANSFORMER STEEL STRIP AT VARIOUS STAGES OF MANUF. WERE STUDIED TO DET. THE LONGITUDINAL AND TRANSVERSE DISTRIBUTION OF THE SURFACE FILM ON THE STRIP AND TO FIND MEANS FOR IMPROVING INTEROPERATION DESCALING. LAB. AND INDUSTRIAL SCALE TESTS WERE MADE ON 70 FURNACE HEATS; THE STRIP SPECIMENS WERE EXAMD. CHEM., METALLOGRAPHICALLY, BY X RAY DIFFRACTION, ELECTRON MICROSCOPY, AND RADIOISOTOPES. FAYALITE WAS THE CHIEF COMPONENT OF THE SURFACE LAYER RESPONSIBLE FOR DIFFICULTIES IN CHEM. DESCALING. FOLLOWING ROLLING FROM 2.5 TO 0.6 MM, THE SURFACE LAYERS CONTAINED C3-10, SiO SUB2 1-7, FE SUB2 O SUB3 0.8-1.0, AND FE 82-90PERCENT. THE AMT. OF SCALE AFTER ROLLING DEPENDS ON THE CONSTITUTION OF THE DESCALED SURFACE, AND CONSTITUTED IS SIMILAR TO 0.65 G-M PRIME2 AFTER THE 1ST COLD ROLLING AND IS SIMILAR TO 2.85 G-M PRIME2 IN THE FINISHING STAGE. A METALLOGRAPHIC ANAL. OF SPECIMENS SUBJECTED TO HIGH TEMP. ANNEALING IN H, N, AND A VACUUM SHOWED THAT, REGARDLESS OF THE ANNEALING ATM., THE THICKNESS OF THE SURFACE LAYERS WAS 6-80 AND 4-36 MU AT THE EDGES AND IN THE MIDDLE OF THE STRIP, RESP. IN THE ABSENCE OF AN OXIDE SURFACE LAYER THE MAGNETIC INDUCTION WAS 19,200-19,500 G WHILE IN THE PRESENCE OF A THICK LAYER IT WAS SIMILAR TO 18,700 G. A MATH. ANAL. OF THE DISTRIBUTION CURVES OF C CONC. IN THE METAL AND IN THE OXIDE LAYER SHOWS THAT THE RATE OF C DIFFUSION (DUE TO A DECARBURIZING ANNEAL) IN THE LAYER AT VARIOUS TEMPS. WAS A FACTOR OF 10 PRIME3 TO 10 PRIME6 LESS THAN THOSE IN THE FESI ALLOY.

UNCLASSIFIED

3/3 024
CIRC ACCESSION NO--AP0115743
ABSTRACT/EXTRACT--FACILITY: LIPETSK, USSR.

UNCLASSIFIED

PROCESSING DATE--09OCT70

LIPETSK, FILIAL MOSK. INST. STALI SPLAVDV,

89

UNCLASSIFIED

1/2 013 UNCLASSIFIED PROCESSING DATE--30OCT70
TITLE--X RAY DIAGNOSIS OF MIXED FORMS OF CANCER OF THE STOMACH -U-

AUTHOR--(02)-SPEKHTER, I.A., MEDVEDEVA, N.T.

COUNTRY OF INFO--USSR

SOURCE--KHIRURGIYA, 1970, NR 5, PP 59-63

DATE PUBLISHED--70

SUBJECT AREAS--BIOLOGICAL AND MEDICAL SCIENCES

TOPIC TAGS--RADIOLOGY, CANCER, STOMACH, DIAGNOSTIC METHODS

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRA--3003/0135

STEP NO--UR/0531/70/000/005/0059/0063

CIRC ACCESSION NO--AP0129391

UNCLASSIFIED

2/2 013

UNCLASSIFIED

PROCESSING DATE--30OCT70

CIRC ACCESSION NO--AP0129391

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. UNDER STUDY WERE CLINICAL ROENTGENOLOGICAL DATA CONCERNING 165 PATIENTS (OF THIS NUMBER 109 WERE OPERATED UPON) SUFFERING FROM CANCER OF THE STOMACH OF DIVERSE LOCALIZATION. CANCER OF MIXED EXOPHYTIC ENDOPHYTIC GROWTH WAS ESTABLISHED ROENTGENOLOGICALLY IN 68 PATIENTS. THE AUTHORS DISCUSS THE POSSIBILITIES AND ROENTGENOLOGICAL RECOGNITION OF ELEMENTS OF ENDOPHYTIC GROWTH OF PRIMARY EXOPHYTIC GASTRIC CANCER. THE MOST DEMONSTRABLE AND SIGNIFICANT CANCEROUS INFILTRATION OF THE GASTRIC WALL IS ESTABLISHED WITH THE AID OF PARIETOGRAPHY. FACILITY: KAFEDRA RENTGENOLOGII I RADIOLOGII MOSKOVSKOGO MEDITSINSKOGO STOMATOLOGICHESKOGO INSTITUTA.

UNCLASSIFIED

USSR

UDC 546.27'17:541.121.16

SAMSONOV, G. V., BURYKINA, A. L., MEDVEDEVA, O. A., and KOSTERUK, V. P.,
Institute of Problems of Material Sciences, Academy of Sciences USSR

"Interaction of Boron Nitride with Transition Metals, Their Borides and Nitrides"

Kiev, Poroshkovaya Metallurgiya, No 11(131), Nov 73, pp 50-57

Abstract: An experimental study was made of the interaction of boron nitride with titanium, zirconium, hafnium, and with zirconium nitride and boride during hot-pressing of the powder mixture in the 1200-2000° C temperature interval. The results are discussed by reference to microstructures of hot-pressed specimens of the Ti-BN, Zr-BN, Hf-BN, and ZrH₂-BN systems. During

interaction of boron nitride with metals, a mixture of nitride and boride phases of metals develops during which, with rising temperatures, the content of the metal nitride decreases. The interaction of boron nitride with zirconium nitride results in the formation of zirconium diboride at 2000° C. At this temperature, boron nitride does not interact with diborides of transition metals. Boron nitride is recommended for works in contact with refractory metals of group IV at up to 1200° C. Composites of diborides of transition

1/2

USSR

SAMSONOV, G. V., et al., Poroshkovaya Metallurgiya, No 11(131), Nov 73,
pp 50-57

metals with boron nitride can be used at up to 2000° C. Six figures, one
table, six formulas, 20 bibliographic reference.

2/2

- 16 -

UDC: 533.6.013.42

USSR

VOL'MIR, A. S. and MEDVEDEVA, S. V.

"Investigating the Flutter of Cylindrical Panels in Ultrasonic Gas Flow"

Moscow, Doklady Akademii nauk SSSR, vol 207, No 4, 1972, pp 811-813

Abstract: This paper is the follow-up to earlier papers on the same subject in which the problem of panel flutter was solved by variation methods with approximation of the curved surface by two terms of a trigonometric series, and the aerodynamic pressure determined from linearized piston theory. In the present paper, the solution to the problem is made more precise through the use of nonlinear shell theory and the method of finite differences, thus making it possible to follow the behavior of the panel with respect to time. The authors begin by considering a circular cylindrical hinge-supported panel loaded by static compressing stresses of a specified intensity and surrounded by an ultrasonic gas stream along the generatrix, and present the initial nonlinear equations describing the panel behavior. The aerodynamic pressure factor in these equations is determined from refined piston theory with corrections for the panel curvature considered. Structural and

1/2

USSR

UDC: 533.6.013.42

VOL'MIR, A. S., et al, Doklady Akademii nauk SSSR, vol 207, No 4, 1972, pp 811-813

aerodynamic damping factors are also taken into account. Curves are plotted for the frequency of steady-state nonlinear flutter oscillations as functions of the Mach number and the compressing stress factor.

2/2

- 9 -

USSR

UDC 636.083.37

KARANFILOV, N. I., Chairman of Kolkhoz imeni M. V. Frunze, Ovidiopol'skiy Rayon, Odesskaya Oblast, Honored Veterinarian, Ukrainian SSR, FAYTEL'BERG, R. Q., Doctor of Medical Sciences, TKACHENKO, G. P., Candidate of Biological Sciences, Senior Scientific Associate, Odessa State University imeni M. I. Mechnikov, MEDVEDEVA, Ye. I., Doctor of Biological Sciences, PANCHENKO, K. A., PETRENKO, Ye. V., LUKINA, G. D., Senior Engineers, BOYKO, L. I., and SELICH, Ye. F., Engineers, Odessa Technological Institute of the Food Industry imeni M. V. Lomonosov

"The Effect of a Preparation Obtained From Algae (Phyllophora) Upon the Weight Gains and Blood Composition of Calves"

Moscow, Zhivotnovodstvo, No 3, Mar 72, pp 82-83

Abstract: A valuable preparation containing amino acids and peptides has been developed from industrial Phyllophora waste by the Odessa Technological Institute of the Food Industry (Author's Certificate No 287959). Employed as a fodder supplement, 4.5 kg of the preparation yield an incremental weight gain of 11.43 kg, in other words, 2.54 kg of meat for each kilogram of the preparation, which costs less than 30 kopeks. The erythrocyte number of the calves increases, as does the hemoglobin content and the total protein content. Additional testing is recommended.

1/1

- 1 -

USSR

UDC 620.178.15.05 .

MIROTVORSKIY, V. S., NIKIFOROV, A. Ya., and MEDVEDITSKIY, V. V.

"Device for Measuring Hardness and Microhardness at High Temperatures"

Moscow, Zavodskaya Laboratoriya, Vol 38, No 9, 1972,
pp 1144-1145

Abstract: The construction of a device for sight-measuring hardness and microhardness of materials on heating in vacuum or in a medium of purified inert gases with 5 g — 5 kg load on indenter is described by reference to its schematic drawing. The temperature of measurements, determined by the vapor pressure of metals, is for copper-base alloys 800-900 °C and for Fe-, Ni-, and Co-base alloys 1000-1100 °C. The working of the device, the use of special indenters, the radiative heating of the specimen with control of its surface, and the measuring of indenter impressions are discussed. The working accuracy rated for Al, Fe, and 30KhGSA and 1Kh13 steels from the relative mean square error in measuring the diagonal of one imprint, comprised 1/2

USSR

MIROTVORSKIY, V. S., et al., Zavodskaya Laboratoriya, Vol 38, No 9, 1972,
pp 1144-1145

± 2.3 - 4.2 % for the described device and ± 1.4 % and ± 3.1 % for two other units. Hardness factors (185 - 192 kg/mm²), determined on different units, and the relative mean square errors in measuring the imprint diagonals on steels (2 - 5 %) showed a good correlation. One figure, five bibliographic references.

2/2

B1

USSR

UDC 624.01.46

MEDEVED'KO, S. V., Engineer, MOSKVIN, V. M. Doctor of Technical Sciences,
BULGAKOVA, M. G., GUZEYEV, Ye. A., Candidates of Technical Sciences

"Particularities of the Work of Prestressed Elements Under a Prolonged Load
in an Aggressive Medium"

Moscow, Beton i Zhelezobeton, No 1, January 1972, pp 18-30

Abstract: At the Central Corrosion Laboratory of the Central Scientific Research Institute of Concrete and Reinforced Concrete, research is conducted on the influence of the simultaneous action of prolonged loading and an aggressive medium, with high moisture, upon the limit states of prestressed reinforced-concrete elements. Results of research on the bending deformation of prestressed reinforced-concrete elements during their prolonged loading in an aggressive medium are presented. It is shown that under the influence of high moisture, created by the dispersion of a 3% solution of sodium chloride, the moment of crack formation decreases somewhat, the deflections of beams increase with prolonged loading, and residual deformations increase after complete unloading. It is noted that the indicated changes are connected with adsorption strength decrease, and with an increase in the deformability of concrete in the elongated zone of the elements. It is pointed out
1/2

USSR

MEDVED'KO, S. V., et al., Beton i Zhelezobeton, No 1, January 1972, pp 18-30

that account must be taken of the particularities of the work of structures in media with high moisture when designing these structures. 4 figures. 1 table. 5 references.

2/2

USSR

UDC 8.74

MEDVED'KO, V. N., ZOLOTOV, A. B.

"Obtaining the Analytical Solution of Ordinary Differential Equations with Constant Coefficients on a Computer"

Tr. TsNII stroit. konstruktiv (Works of the All-Union Scientific Research Institute of Construction Parts), 1971, vyp. 20, pp 11-17 (from RZh-Kibernetika, No 9, Sep 72, Abstract No 9V633)

Translation: The existing and proposed procedures for solving a system of ordinary differential equations with constant coefficients are described. The difference of the latter consists in using it to obtain the solution in purely analytical form. This permits a higher-quality analysis of the problems to be performed. It is noted that the proposed procedure has been checked when solving the practical problems of calculating structural elements.

1/1

USSR

UDC: None

FILONCHIK, A. V., MEDVEDKOV, V. I., MAN'KO, V. V., and LAPTEV, I. I.

"Device for Solving Partial Differential Equations"

Moscow, Otkrytiya. izobreteniya, promyshlennyye obraztsy, tovarnyye znaki, No 29, 1973, Author's certificate 389521, p 179

Abstract: This device contains a grid model and a control unit. The inputs to the latter are connected to a program unit, while its outputs are joined to an output switch and a unit for specifying the boundary conditions of the grid model. Its distinctive feature is an auxiliary grid model which shortens the time for solution of the partial differential equation and has the effect of simplifying the structure of the device. The interconnections of this auxiliary grid model with the other units are given.

1/1

1/2 012 UNCLASSIFIED PROCESSING DATE--7 NOV 70
TITLE--FORMATION OF COKE IN STATICALLY AND FLUIDIZED BEDS OF ALUMINA,
CHROMIUM OXIDE, POTASSIUM OXIDE CATALYST DURING N-HEPTANE DEHYDROCYCLIZATION -U-
AUTHOR-(US)-NEVIROVA, L.A., IVANOVA, N.G., KOZENCARI, M.I., KOTIKOV, N.I.,
MEDVEDEVSKAYA, I.I.
COUNTRY OF ORIGIN--USSR

SOURCE--NEFTEKHIMIYA 1970, 10(11), 37-41.

DATE PUBLISHED-----70

SUBJECT AREAS--CHEMISTRY

TOPIC TAGS--COKE, FLUIDIZED BED, ALUMINA, CHROMIUM OXIDE, POTASSIUM OXIDE,
CATALYST ACTIVITY, CYCLIZATION, HEPTANE, AROMATIC HYDROCARBON/(U)KA237
CATALYST

CONTROL MARKING--NO RESTRICTIONS

DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--2000/2101

STEP NO--UR/0204/70/010/001/0037/0041

IRG ACCESSION NO--AP0125439

2/2 212

UNCLASSIFIED

PROCESSING DATE--20NOV70

IRC ACCESSION NO--AP0125665

ABSTRACT/EXTRACT--(U) CP-C- ABSTRACT. INCREASED COKE FORMATION DUE TO INCREASED CONTACT TIME AND TEMP. IN A STATIONARY BED OF 2.9 TIMES 2.2 MM PARTICLES OF AL₂O₃ CR₂O₃ OXIDE CATALYST KA,237 WAS ABOUT THE SAME AS THAT IN A FLUIDIZED BED OF 33-64 MU PARTICLES OF THE SAME CATALYST DURING DEHYDROCYCLIZATION OF N-HEPTANE (I) AT 510-40 AND 510-50DEGREES, RESP., BUT THE INCREASE WAS NONLINEAR IN THE CASE OF THE STATIONARY CATALYST LAYER. COKE DEPOSITS DECREASED MONOTONICALLY THROUGH THE LATTER BUT WERE EVENLY DISTRIBUTED IN THE FLUIDIZED BED. AT 510DEGREES AND AN INPUT RATE OF SIMILAR TO 0.5 HR PRIMENEGATIVE1 WHEN THE COKE YIELD WAS 1.2PERCENT, AROMATIC HYDROCARBON YIELDS INCREASED FROM 41.9 TO 63.2 AND 55.1PERCENT AS THE LENGTH OF THE RUN WAS RAISED FROM 1 TO 2 AND 3 HR, BUT WHEN A HEPTANE FRACTION (31.4PERCENT N-HEPTANE, 46.4PERCENT OTHER ALKANES, 21.2PERCENT ISOPREPIANES, 17.2PERCENT NAPHTHENE, AND 5PERCENT AROMATIC HYDROCARBONS) WAS SUBSTITUTED AND THE COKE YIELD WAS 5.1PERCENT, AROMATIC HYDROCARBON YIELDS DECREASED FROM 24.9 TO 18.5 AND 15.6PERCENT. AT 548DEGREES, WHEN COKE YIELDS WERE 1.9 AND 8.6PERCENT, AROMATIC HYDROCARBON YIELDS FROM RUNS OF THE RESP. LENGTHS WERE 69.9, 69.0, AND 70.5PERCENT FOR 1 AND 44.9, 33.9, AND 18.0) FOR THE HEPTANE FRACTION. REDUCED CATALYTIC ACTIVITY WAS MARKED ONLY FOR A COKE CONTENT IS GREATER THAN OR EQUAL TO 8PERCENT. FACILITY: INST. ORG. KHIP. IM. ZELINSKOGO, MOSCOW, USSR.

Public Health, Hygiene and Sanitation

USSR

UDC 621.373.826:57

KIRICHINSKIY, B. R., SHEPELEV, V. N., MEDVEDOVSKAYA, TS. P., LYSINA, G. G.,
LOGANOVSKIY, N. G., SOLETSKAYA, A. S., VOL'FOVSKAYA, R. KH.

"Effect of Laser Emission on the Organism of Industrial Workers"

V sb. Ispol'z. optich. kvant. generatorov v sovrem. tekhn. i med. Ch. 2-3
(Utilization of Lasers in Modern Engineering and Medicine. Parts 2-3 -- collec-
of works), Leningrad, 1971, pp 108-110 (from RZh-Radiotekhnika, No 1, 1972,
Abstract No 1D651)

Translation: A report is presented on examination of 40 people working 3.4 years on the average with laser emission (200-200 bursts per week with a pulse duration of 20-40 nanoseconds and an energy of 1-10 joules and up to 1 joule in the continuous mode). It was calculated that the radiation level on the cornea was $5 \cdot 10^{-6}$ - $5 \cdot 10^{-7}$ joules, which is approximately 2 orders higher than the levels which the majority of authors recommend as the maximum allowable and approaches the threshold values (causing minimum damage to the retina). For people with low seniority, pronounced shifts in autonomic vascular regulation was often detected with some lowering of visual function and liability of composition of peripheral blood. This has the nature of functional-dynamic shifts.

1/1

USSR

NDC 621.762.224

NAYDA, YU. I., NICHIPORENKO, O. S., and MEDVEDOVSKIY, A. B., Institute of Problems of Material Science, Academy of Sciences Ukrainian SSR

"Aerodynamic Characteristics of Nozzles for Spraying Molten Metal"

Kiev, Poroshkovaya Metallurgiya, No 5, May 73, pp 94-100

Abstract: A study is made of existing nozzles for spraying molten metal, and the design of a new nozzle is proposed which eliminates the sticking of metal during operation in any modes as well as providing effective use of gas flow energy. A diagram of the new nozzle design is given. This design is based on mathematical formulas of aerodynamics for determining critical parameters of optimum shape, flow channel length, metal flow rates, etc. The new nozzle sprays metal with 64% of the particles less than 0.05 mm in size, as compared with three other nozzles in which the percentages of particles less than 0.05 mm are 5, 40, and 35%. 4 figures, 3 tables, 15 bibliographic references.

1/1

1/2 020 UNCLASSIFIED PROCESSING DATE--02OCT70
TITLE--SHAPE SEPARATION OF METAL POWDERS -U-
AUTHOR-(02)-NICHIPORENKO, O.S., MEDEVDOVSKY, A.B. M
COUNTRY OF INFO--USSR
SOURCE--POROSHKOVAYA MET., JAN. 1970, (1), 1-5
DATE PUBLISHED----JAN70

SUBJECT AREAS--MATERIALS, MECH., IND., CIVIL AND MARINE ENGR
TOPIC TAGS--METAL POWDER, SCREENING MACHINERY, ELECTROSTATICS

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAE--1990/1288 STEP NO--UR/0224/70/000/001/0001/0005
CIRC ACCESSION NO--AP0109372
UNCLASSIFIED

2/2 020

UNCLASSIFIED

PROCESSING DATE--02OCT70

GIRC ACCESSION NO--AP0109372

ABSTRACT/EXTRACT--(U) GP-O- ABSTRACT. THE GENERAL PRINCIPLES UNDERLYING THE SEPARATION OF METAL POWDERS INTO PARTICLES OF DIFFERENT SHAPES AND SIZES BY A METHOD BASED ON ELECTROSTATIC DISCRIMINATION ARE EXPLAINED. ELECTRIC SEPARATORS ARE PARTICULARLY SENSITIVE TO THE SHAPES OF THE PARTICLES AND IT IS ACCORDINGLY A SIMPLE MATTER TO DISTINGUISH SPHERICAL PARTICLES FROM THOSE OF OTHER FORMS. BY REPEATED CYCLING THE DEGREE OF SEPARATION MAY BE INCREASED. LIMITING PURITIES OF 95 PERCENT MAY BE ACHIEVED IN THIS WAY.

UNCLASSIFIED

Medvedskiy V.I.

Article by V.I. Medvedskiy, Moscow, Geodesiya i Inzheneriya, No. 1, 1972, pp. 25-27.

CONSTRUCTING A SPACE GEODETIC NETWORK BY THE LINE-ANGLE METHOD

UDC 524.711.620.125

JPRS 56126
21 June 1972

High-power optical quantum instruments (lasers) make it possible to construct a network of artificial earth satellites (AES) with a precision of ± 1 m. A number of successful experiments have been conducted in projection of a laser ray in the beam of a laser [7, 8]. All these developments open tremendous possibilities for utilizing lasers as a geodetic link for remote points on the Earth's surface.

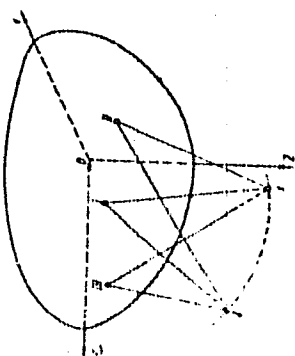


Figure 1.

Let us examine the possibility of constructing a space geodetic network by the line-angle method with the use of a laser. Assume that we have three points on the Earth's surface (Fig. 1). The coordinates of point I while those of points II and III are unknown. If we set at point I a laser installation for the light ranging of a satellite and if we photograph it in the beam of

-1-

[I - USSR - E]

1/2 019 UNCLASSIFIED PROCESSING DATE--20NOV70
TITLE--GAUGE INVARIANCE AND REGULARIZATION -U-
AUTHOR-(U3)-MEDVEDYEV, B.V., PAVLOV, V.P., SUKHANOV, A.D.
COUNTRY OF INFO--USSR
SOURCE--ZHURNAL EKSPERIMENTAL'NOY I TEORETICHESKOY FIZIKI, 1970, VOL 58,
NR 6, PP 2099-2109
DATE PUBLISHED-----70

SUBJECT AREAS--MATHEMATICAL SCIENCES
TOPIC TAGS--PAULI EXCLUSION PRINCIPLE, PERTURBATION THEORY, INTEGRAL
FUNCTION, INTEGRAL CALCULUS

CONTROL MARKING--NO RESTRICTIONS
DOCUMENT CLASS--UNCLASSIFIED
PROXY REEL/FRAME--1998/0534 STEP NO--UR/0056/T0/058/006/2099/2109
CIRC ACCESSION NO--AP0121206
UNCLASSIFIED

2/2 019

UNCLASSIFIED

PROCESSING DATE--20NOV79

CIRC ACCESSION NO--AP0121206

ABSTRACT/EXTRACT--(U) GP-0- ABSTRACT. IT IS SHOWN THAT PAULI-WILLIAMS REGULARIZATION REQUIRED FOR CONSERVATION OF GAUGE INVARIANCE AT ALL CALCULATION STAGES IN PERTURBATION THEORY POSSESSES SOME SINGULAR PROPERTIES. THUS INTEGRALS OF POSITIVELY DEFINITE FUNCTIONS, CONVERGING AS WELL AS DIVERGING, ARE MADE TO VANISH; MOREOVER IT LEADS TO DISCONTINUITIES IN THE REGULAR PARTS OF DIVERGING DIAGRAMS. THE PHYSICAL MEANING OF THE PAULI-WILLIAMS PROCEDURE IS DISCUSSED, AND THE POSSIBILITY OF EXTENDING THE PROCEDURE IN SUCH A WAY AS TO MAKE THE DIVERGENT PARTS OF ALL DIAGRAMS VANISH IS DISCUSSED. FACILITY: MATEMATICHESKIY INSTITUT IM. STEKLOVA AN SSSR.

UNCLASSIFIED

USSR

UDC 669.721.472

STRELETS, Kh. L., DEVYATKIN, V. N., TATAKIN, A. N., CHESNOKOV, A. S., CHISTYAKOVA, V. S., MEDVETSKAYA, G. A., BONDARENKO, N. V.

"Development of Designs of Diaphragmless Magnesium Electrolyzers"

Tr. Vses. N-i. i Projektn. In-ta. Alyumin., Magn. i Elektrodn. Prom-sti [Works of All-Union Scientific Research and Planning Institute of the Aluminum, Magnesium and Electrode Industry], 1970, No. 72, pp. 41-47. (Translated from Referativnyy Zhurnal Metallurgiya, No. 5, 1971, Abstract No. 5 G195 by the authors).

Translation: Results are presented from testing of pilot-scale diaphragmless electrolyzers (DE) with upper and lower input of anodes. The DE allow the specific consumption of electric power to be decreased by about 1500 kw·hr/t Mg, increasing the specific removal of Mg by 30-35% and decreasing the losses of Cl in the exhaust gases. The results of testing indicated that DE with lower position of the anodes should be introduced at two plants. 2 figs; 2 tables, 6 biblio refs.

1/1

USSR

UDC 681.333

GOROKHOV, YU. S., MEDYAKOV, I. N., and TREL', G. V.

"Differential Gear Modeling Device"

USSR Authors' Certificate No 341051, Cl. G 06g 7/64, filed 26 Nov 70, published 5 Jun 72 (from Otkrytiya, Izobreteniya, Promyshlennyye Obraztsy, Tovarnyye Znaki, No 18, 5 Jun 72, p 185)

Abstract: The device contains diodes, resistors, and operational amplifiers. To increase modeling accuracy and enlarge the class of problems that can be solved, it contains kinematic chain models whose outputs are connected to the input of the summing amplifier and to the outputs of the device. One of the summing amplifier outputs is connected to a series-connected integrating amplifier and inverting amplifier; the other summing amplifier output is connected to one of the inputs of the computing amplifier; the other input, to the output of the inverting amplifier, to whose feedback is connected a four-diode bridge; and the computing amplifier output is connected to the kinematic chain models, the first inputs of which are connected to the inputs of the device.

1/1

USSR

UDC: 532.132

MEDYANIK, A. N. and SERBIN, I. A.

"Device for Investigating the Second Sound in Rotating Superfluid Solutions of ^3He - ^4He "

Trudy, Fiziko-tekhnicheskiy institut nizkikh temperatur (Physico-technical Institute for Low Temperatures--collection of works) Academy of Sciences, Ukrainian SSR, No. 10, 1970, pp 183-191 (from RZh-Fizika, No. 9, 1971, Abstract No. 9E37)

Translation: A device is described for investigating the second sound in rotating superfluid solutions of ^3He - ^4He at temperatures above 1.4° K and at rotational velocities of 0.5-240 rpm with a rotational nonuniformity of 0.3-0.5%. The device differs from that described in the literature in that the excitation and detection of the second sound are realized by the contactless method with the help of a system of connected tuned circuits; the construction of the device takes into account the peculiarities of work with ^3He - ^4He solutions. Also described is a radio measuring system which permits measuring the velocity and added absorption of the second sound in the rotation. Author's abstract.

1/1

USSR

UDC 612.825.014.481.1.014.42

MEDYANYK, I. A., Institute of Physiology, Kiev University imeni
~~I. G. Shevchenko~~

"The Effect of a Direct Current on the Activity of Symmetrical
Areas of the Cerebral Cortex in Irradiated Animals"

Kiev, Fiziologicheskiy Zhurnal, Vol 17, No 1, Jan/Feb 71,
pp 26-32

Abstract: Previous investigations established that radiation tends to disrupt conditioned reflex activity in the symmetrical areas of the cerebral cortex. Shifts in the activity of the cerebral cortex of irradiated dogs under the influence of the anode and cathode of a direct current were studied. Positive symmetrical conditioned food reflexes were developed in animals. The heads of the animals were X-ray irradiated with total doses of 400 rad. The effect of the direct current anode and cathode on symmetric areas of the cerebral cortex was established before and immediately after irradiation, and then a month after the
1/2

USSR

MEDYANYK, I. A., Fiziologicheskii Zhurnal, Vol 17, No 1, Jan/
Feb 71, pp 26-32

beginning of the experiments. An analysis of the data obtained revealed that anodization of the cerebral cortex of irradiated animals alleviated the phase disturbance of conditioned reflex activity in the symmetrical areas of the cerebral hemispheres and the parabiologic inhibitions induced by radiation, and hastened the restoration of the functional activities of these areas of the cortex to their initial preradiation level. Cathodization had an effect opposite to that of anodization.

2/2